CLAIMS

1. An instrument for removing a tissue sample from a subject, the instrument comprising a housing, said housing comprising a plurality of tissue sampling devices, each of said devices comprising an isolated chamber, wherein each of said devices is independently controlled.

2. The instrument of claim 1, wherein said housing comprises an interior lumen, said lumen comprising a deployment control element.

3. The instrument of claim 2, wherein said chamber does not communicate said tissue sample to said interior lumen.

4. The instrument of claim 1, wherein said housing is solid and wherein a deployment control device is embedded in or located on an exterior surface of said housing.

5. The instrument of claim 2, wherein said deployment control element emits an electrical, optical, pneumatic, hydraulic, RF- transmitted, inductive, magnetic, thermal or sonic signal.

6. The instrument of claim 4, wherein said deployment control element emits an electrical, optical, pneumatic, hydraulic, RF- transmitted, inductive, magnetic, thermal or sonic signal.

7. The instrument of claim 2 or 4, wherein said deployment control element comprises a heating element and wherein said chamber comprises a heat conductive cover element.

8. The instrument of claim 1, wherein the tissue sampling devices are radially disposed about the instrument.

9. The instrument of claim 1, wherein the plurality of tissue sampling devices are positioned in an array along the length of the instrument.

10. The instrument of claim 1 wherein the plurality of tissue sampling devices are fixed in a position along an outside diameter of an exterior face of the instrument.

11. The instrument of claim 1, wherein a sampling device of said plurality comprises a set of jaws activated by an expandable volume to mechanically actuate and collect a sample.

12. The instrument of claim 1 wherein the tissue sampling devices include vacuum sampling chambers.

13. The instrument of claim 1 wherein the tissue sampling devices include a mechanical cutting sampling device.

14. The instrument of claim 13, wherein said mechanical cutting device comprises a sleeve, said sleeve being located exterior to said chambers.

15. The instrument of claim 14, wherein said sleeve comprises a sealing element.

16. An instrument for removing a tissue sample from a subject, the instrument comprising a housing, said housing comprising a plurality of tissue sampling devices, each of said devices comprising an isolated chamber, wherein the volume of said chamber ranges from 0.001 to 1 cubic millimeter.

17. A method of extracting multiple tissue samples from a subject, comprising

inserting into the subject an instrument comprising a plurality of independently-controlled tissue sampling devices on a housing, each of said sampling devices comprising an isolated chamber;

contacting a sampling device with deployment signal, said signal being selected from the group consisting of an electrical, optical, pneumatic, hydraulic, RF- transmitted, inductive, magnetic, thermal or sonic signal, said signal causing an opening of said chamber;

removing a tissue sample from an anatomical location adjacent to said chamber; and

sealing said chamber.

18. The method of claim 17, wherein said sampling devices are deployed simultaneously.

19. The method of claim 17, wherein each of said sampling devices is deployed temporally.

20. A method of extracting multiple tissue samples from a subject, the method comprising:

inserting the instrument of claim 1 into the subject;

heating the plurality of sampling devices, heating causing actuation of a mechanical portion of the plurality of sampling devices, such that a mechanical portion of the sampling devices collects a sample and retains the sample;

depositing the sample into a local chamber; and

removing the instrument from the subject.

21. The method of claim 20, wherein heating comprises passing electrical current through a portion of the extracting device.

22. The method of claim 20, wherein collecting and retaining the sample comprises applying a differential pressure to the local chamber and sucking the sample into the local chamber.

23. The method of claim 20, further comprising ejecting the samples by pressurizing the chamber.

24. The method of claim 20, wherein collecting and retaining the sample comprises scooping the sample from the subject by pivoting a scoop from a rest position after heating the scoop.

25. The method of claim 20, wherein collecting and retaining the sample comprises expanding a volume of a fluid in a chamber and causing a set of jaws to deploy from the chamber.

26. The method of claim 20, further comprising imaging a location of the sample fiberoptically.